

CLAIM SUMMARY DOCUMENT:

1. (Currently Amended) An apparatus for inducing emotions based on detection of biosignals from a body of a user and on emotion induction protocols for selectively controlling visual, auditory, olfactory and tactile stimuli, comprising:

an emotion induction module for selecting an emotion induction protocol capable of inducing a desired emotion selected by the user, extracting one or more bioparameters from the biosignals, and changing the emotion induction protocol depending on increase/decrease patterns of the respective extracted bioparameters so as to induce the emotion;

a biostimulation module for outputting physical signals for applying the stimuli to the ~~user~~ user's body based on the selected emotion induction protocol; and

a biosignal measurement module for detecting one or more biosignals from the ~~user~~ user's body and outputting them to the emotion induction module before and after the output of the physical signals from the biostimulation module.

2. (Original) The apparatus as claimed in claim 1, wherein the emotion includes any one of pleasure, sadness, anger, fear, disgust and surprise.

3. (Original) The apparatus as claimed in claim 1, wherein the emotion induction module comprises a bioparameter change model storage unit in which change models for the respective bioparameters by emotional states are stored, an emotion induction protocol storage unit in which emotion induction protocols capable of inducing physiological signals for the emotional states are stored, and an emotion induction control unit for comparing the increase/decrease patterns of the respective bioparameters extracted from the biosignals with the bioparameter change models and changing the emotion induction protocols depending on comparison results.

4. (Original) The apparatus as claimed in claim 3, wherein the emotion induction protocols are protocols configured by combining the contents capable of

inducing cognitive action of the central nervous system, and conditions of illumination, fragrance and temperature/humidity capable of inducing physiological action of the autonomic nervous system.

5. (Original) The apparatus as claimed in claim 4, wherein the emotion induction protocol is configured in such a manner that the contents and the conditions of illumination, fragrance and temperature/humidity are graded according to the respective bioparameters into various levels in order of capability to induce the increase of the bioparameters.

6. (Original) The apparatus as claimed in claim 3, wherein the emotion induction control unit compares the increase/decrease patterns of the respective bioparameters extracted from the biosignals with the bioparameter change models, extracts deviations of the increase/decrease patterns of the respective bioparameters from the bioparameter change models, and checks whether the user has reached a desired emotional state based on the deviations of the increase/decrease patterns of the respective bioparameters.

7. (Currently Amended) The apparatus as claimed in claim 3 or 5, wherein if an increase/decrease pattern of only one bioparameter among the bioparameters extracted from the biosignals does not conform to the bioparameter change model, the emotion induction control unit changes the level of the unconformable bioparameter in the emotion induction protocol.

8. (Currently Amended) The apparatus as claimed in claim 3 or 5, wherein if increase/decrease patterns of a plurality of bioparameters among the bioparameters extracted from the biosignals do not conform to the bioparameter change models, the emotion induction control unit changes the levels of bioparameters, which are selected according to priorities of changes in the bioparameters, in the emotion induction protocol.

9. (Original) The apparatus as claimed in claim 8, wherein the priorities of changes in the bioparameters are set in order of induction facilitation of the bioparameters for a relevant emotion induction.

10. (Currently Amended) The apparatus as claimed in claim 3 or 5, wherein if increase/decrease patterns of all the bioparameters extracted from the biosignals do not conform to the bioparameter change models, the emotion induction control unit changes the contents of the emotion induction protocol.

11. (Original) The apparatus as claimed in claim 1, wherein the physical signals outputted from the biostimulation module stimulate at least one of the visual, auditory, olfactory and tactile senses.

12. (Original) The apparatus as claimed in claim 1, wherein the biosignal measurement module comprises a sensor unit for detecting one or more biosignals from the user's body, and the sensor unit includes a heartbeat detection sensor for detecting a heartbeat biosignal from the user's body and a skin resistance sensor for measuring skin resistance of the user's body.

13. (Original) The apparatus as claimed in claim 12, wherein bioparameters for the number of heartbeats and a variation of the heartbeat are extracted from the heartbeat biosignal, and a bioparameter for the skin resistance is extracted from a skin resistance biosignal.

14. (Original) The apparatus as claimed in claim 1, wherein the biosignal measurement module further comprises a signal processing unit for amplifying and filtering the detected biosignals, an analog/digital conversion unit by which if the detected biosignals are in the form of analog signals, the analog biosignals are converted into digital signals, and a radio signal transmitter for converting the digital biosignals outputted from the analog/digital conversion unit into radio signals and transmitting the radio signals.

15. (Original) A method for inducing emotions based on emotion induction protocols capable of selectively controlling visual, auditory, olfactory and tactile stimuli, comprising the steps of:

- selecting a desired emotion by a user;
- detecting one or more biosignals from the user's body and extracting one or more bioparameters from the detected biosignals;
- outputting physical signals for stimulating the user's body based on an emotion induction protocol capable of inducing the selected emotion;
- after the output of the physical signals, detecting one or more biosignals from the user's body and extracting one or more bioparameters from the detected biosignals; and
- inducing the emotion by changing the emotion induction protocol based on increase/decrease patterns of the bioparameters extracted from the biosignals.

16. (Original) The method as claimed in claim 15, wherein the emotion includes any one of pleasure, sadness, anger, fear, disgust and surprise.

17. (Original) The method as claimed in claim 15, wherein the emotion induction protocols are protocols configured by combining the contents capable of inducing cognitive action of the central nervous system, and conditions of illumination, fragrance and temperature/humidity capable of inducing physiological action of the autonomic nervous system.

18. (Original) The method as claimed in claim 17, wherein the emotion induction protocol is configured in such a manner that the contents and conditions of illumination, fragrance and temperature/humidity are graded according to the respective bioparameters into various levels in order of capability to induce the increase of the bioparameters.

19. (Original) The method as claimed in claim 15, wherein the physical signals stimulate at least one of the visual, auditory, olfactory and tactile senses.

20. (Original) The method as claimed in claim 15, wherein the biosignals include biosignals for heartbeat and skin resistance of the user's body.

21. (Original) The method as claimed in claim 20, wherein bioparameters for the number of heartbeats and a variation of the heartbeat are extracted from the heartbeat biosignal, and a bioparameter for the skin resistance is extracted from the skin resistance biosignal.

22. (Original) The method as claimed in claim 15, wherein the detected biosignals are amplified and filtered; if the detected biosignals are in the form of analog signals, the analog biosignals are converted into digital biosignals; and the digital biosignals are converted into radio signals which in turn are transmitted.

23. (Original) The method as claimed in claim 15, wherein the step of inducing the emotion further comprises the steps of comparing the increase/decrease patterns of the extracted respective bioparameters with the respective bioparameter change models, extracting deviations of the increase/decrease patterns of the respective bioparameters from the bioparameter change models, and checking whether the user has reached a desired emotional state based on the deviations of the increase/decrease patterns of the respective bioparameters.

24. (Currently Amended) The method as claimed in claim 18 or 23, further comprising the step of, if the user has not reached a desired emotional state, changing the contents or level of the emotion induction protocol.

25. (Original) The method as claimed in claim 24, wherein the step of changing the contents or level of the emotion induction protocol comprises the step of, if an increase/decrease pattern of only one bioparameter among the bioparameters extracted from the biosignals does not conform to the bioparameter change model, changing the level of the unconformable bioparameter in the emotion induction protocol.

26. (Original) The method as claimed in claim 24, wherein the step of changing the contents or level of the emotion induction protocol comprises the step of, if increase/decrease patterns of a plurality of bioparameters among the bioparameters extracted from the biosignals do not conform to the bioparameter change models, changing the levels of bioparameters, which are selected according to priorities of changes in the bioparameters, in the emotion induction protocol.

27. (Original) The method as claimed in claim 26, wherein the priorities of changes in the bioparameters are set in order of induction facilitation of the bioparameters for a relevant emotion induction.

28. (Original) The method as claimed in claim 24, wherein the step of changing the contents or level of the emotion induction protocol comprises the step of, if increase/decrease patterns of all the extracted bioparameters do not conform to the bioparameter change models, changing the contents of the emotion induction protocol.

29. (New) The apparatus as claimed in claim 5, wherein if an increase/decrease pattern of only one bioparameter among the bioparameters extracted from the biosignals does not conform to the bioparameter change model, the emotion induction control unit changes the level of the unconformable bioparameter in the emotion induction protocol.

30. (New) The apparatus as claimed in claim 5, wherein if increase/decrease patterns of a plurality of bioparameters among the bioparameters extracted from the biosignals do not conform to the bioparameter change models, the emotion induction control unit changes the levels of bioparameters, which are selected according to priorities of changes in the bioparameters, in the emotion induction protocol.

31. (New) The apparatus as claimed in claim 5, wherein if increase/decrease patterns of all the bioparameters extracted from the biosignals do not conform to the

bioparameter change models, the emotion induction control unit changes the contents of the emotion induction protocol.

32. (New) The method as claimed in claim 23, further comprising the step of, if the user has not reached a desired emotional state, changing the contents or level of the emotion induction protocol.